Activity 02 - Changing images

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Getting setup

```
C:\Users\Abby0803>docker pull ubuntu:16.04
16.04: Pulling from library/ubuntu
Digest: sha256:9775877f420d453ef790e6832d77630a49b32a92b7bedf330adf4d8669f6600e
Status: Image is up to date for ubuntu:16.04
docker.io/library/ubuntu:16.04
```

Modifying an image

```
C:\Users\Abby0803>docker run -it ubuntu:16.04 /bin/bash
root@92599fab1ba3:/# ping google.com
bash: ping: command not found
root@92599fab1ba3:/# apt-get update
Get:1 http://archive.ubuntu.com/ubuntu xenial InRelease [247 kB]
Get:2 http://security.ubuntu.com/ubuntu xenial-security InRelease [109 kB]
Get:3 http://security.ubuntu.com/ubuntu xenial-security/main amd64 Packages [2051 kB]
Get:4 http://archive.ubuntu.com/ubuntu xenial-updates InRelease [109 kB]
Get:5 http://archive.ubuntu.com/ubuntu xenial-backports InRelease [107 kB]
Get:6 http://archive.ubuntu.com/ubuntu xenial/main amd64 Packages [1558 kB]
Get:7 http://archive.ubuntu.com/ubuntu xenial/restricted amd64 Packages [14.1 kB]
Get:8 http://archive.ubuntu.com/ubuntu xenial/universe amd64 Packages [9827 kB]
Get:9 http://security.ubuntu.com/ubuntu xenial-security/restricted amd64 Packages [15.9 kB]
Get:10 http://security.ubuntu.com/ubuntu xenial-security/universe amd64 Packages [984 kB]
Get:11 http://security.ubuntu.com/ubuntu xenial-security/multiverse amd64 Packages [8820 B]
Get:12 http://archive.ubuntu.com/ubuntu xenial/multiverse amd64 Packages [176 kB]
Get:13 http://archive.ubuntu.com/ubuntu xenial-updates/main amd64 Packages [2559 kB]
Get:14 http://archive.ubuntu.com/ubuntu xenial-updates/restricted amd64 Packages [16.4 kB]
Get:15 http://archive.ubuntu.com/ubuntu xenial-updates/universe amd64 Packages [1544 kB]
Get:16 http://archive.ubuntu.com/ubuntu xenial-updates/multiverse amd64 Packages [26.2 kB]
Get:17 http://archive.ubuntu.com/ubuntu xenial-backports/main amd64 Packages [10.9 kB]
Get:18 http://archive.ubuntu.com/ubuntu xenial-backports/universe amd64 Packages [12.7 kB]
Fetched 19.4 MB in 1min 12s (269 kB/s)
Reading package lists... Done
```

```
root@92599fab1ba3:/# apt-get install iputils-ping
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libffi6 libgmp10 libgnutls-openssl27 libgnutls30 libhogweed4 libidn11 libnettle6 libp11-kit0
  libtasn1-6
Suggested packages:
  gnutls-bin
The following NEW packages will be installed:
  iputils-ping libffi6 libgmp10 libgnutls-openssl27 libgnutls30 libhogweed4 libidn11 libnettle6
  libp11-kit0 libtasn1-6
0 upgraded, 10 newly installed, 0 to remove and 5 not upgraded.
Need to get 1307 kB of archives.
After this operation, 3781 kB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://archive.ubuntu.com/ubuntu xenial/main amd64 libgmp10 amd64 2:6.1.0+dfsg-2 [240 kB]
Get:2 http://archive.ubuntu.com/ubuntu xenial-updates/main amd64 libnettle6 amd64 3.2-1ubuntu0.16.04.2 [
93.7 kB]
Get:3 http://archive.ubuntu.com/ubuntu xenial-updates/main amd64 libhogweed4 amd64 3.2-1ubuntu0.16.04.2
[136 kB]
Get:4 http://archive.ubuntu.com/ubuntu xenial-updates/main amd64 libidn11 amd64 1.32-3ubuntu1.2 [46.5 kB
]
Get:5 http://archive.ubuntu.com/ubuntu xenial/main amd64 libffi6 amd64 3.2.1-4 [17.8 kB]
Get:6 http://archive.ubuntu.com/ubuntu xenial-updates/main amd64 libp11-kit0 amd64 0.23.2-5~ubuntu16.04.
2 [107 kB]
Get:7 http://archive.ubuntu.com/ubuntu xenial-updates/main amd64 libtasn1-6 amd64 4.7-3ubuntu0.16.04.3 [
43.5 kB]
Get:8 http://archive.ubuntu.com/ubuntu xenial-updates/main amd64 libgnutls30 amd64 3.4.10-4ubuntu1.8 [54
8 kB]
Get:9 http://archive.ubuntu.com/ubuntu xenial-updates/main amd64 libgnutls-openssl27 amd64 3.4.10-4ubunt
u1.8 [21.9 kB]
Get:10 http://archive.ubuntu.com/ubuntu xenial/main amd64 iputils-ping amd64 3:20121221-5ubuntu2 [52.7 k
B]
Fetched 1307 kB in 7s (171 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
Selecting previously unselected package libgmp10:amd64.
(Reading database ... 4785 files and directories currently installed.)
Preparing to unpack .../libgmp10_2%3a6.1.0+dfsg-2_amd64.deb ...
Unpacking libgmp10:amd64 (2:6.1.0+dfsg-2) ...
Selecting previously unselected package libnettle6:amd64.
Preparing to unpack .../libnettle6_3.2-1ubuntu0.16.04.2_amd64.deb ...
Unpacking libnettle6:amd64 (3.2-1ubuntu0.16.04.2) ...
Selecting previously unselected package libhogweed4:amd64.
Preparing to unpack .../libhogweed4_3.2-1ubuntu0.16.04.2_amd64.deb ...
Unpacking libhogweed4:amd64 (3.2-1ubuntu0.16.04.2) ...
Selecting previously unselected package libidn11:amd64.
Preparing to unpack .../libidn11_1.32-3ubuntu1.2_amd64.deb ...
Unpacking libidn11:amd64 (1.32-3ubuntu1.2) ...
```

```
Unpacking libffi6:amd64 (3.2.1-4) ...
Selecting previously unselected package libp11-kit0:amd64.
Preparing to unpack .../libp11-kit0_0.23.2-5~ubuntu16.04.2_amd64.deb ...
Unpacking libp11-kit0:amd64 (0.23.2-5~ubuntu16.04.2) ...
Selecting previously unselected package libtasn1-6:amd64.
Preparing to unpack .../libtasn1-6_4.7-3ubuntu0.16.04.3_amd64.deb ...
Unpacking libtasn1-6:amd64 (4.7-3ubuntu0.16.04.3) ...
Selecting previously unselected package libgnutls30:amd64.
Preparing to unpack .../libgnutls30_3.4.10-4ubuntu1.8_amd64.deb ...
Unpacking libgnutls30:amd64 (3.4.10-4ubuntu1.8) ...
Selecting previously unselected package libgnutls-openssl27:amd64.
Preparing to unpack .../libgnutls-openssl27_3.4.10-4ubuntu1.8_amd64.deb ...
Unpacking libgnutls-openssl27:amd64 (3.4.10-4ubuntu1.8) ...
Selecting previously unselected package iputils-ping.
Preparing to unpack .../iputils-ping_3%3a20121221-5ubuntu2_amd64.deb ...
Unpacking iputils-ping (3:20121221-5ubuntu2) ...
Processing triggers for libc-bin (2.23-0ubuntu11.2) ...
Setting up libgmp10:amd64 (2:6.1.0+dfsg-2) ...
Setting up libnettle6:amd64 (3.2-1ubuntu0.16.04.2) ...
Setting up libhogweed4:amd64 (3.2-1ubuntu0.16.04.2) ...
Setting up libidn11:amd64 (1.32-3ubuntu1.2) ...
Setting up libffi6:amd64 (3.2.1-4) ...
Setting up libp11-kit0:amd64 (0.23.2-5~ubuntu16.04.2) ...
Setting up libtasn1-6:amd64 (4.7-3ubuntu0.16.04.3) ...
Setting up libgnutls30:amd64 (3.4.10-4ubuntu1.8) ...
Setting up libgnutls-openssl27:amd64 (3.4.10-4ubuntu1.8) ...
Setting up iputils-ping (3:20121221-5ubuntu2) ...
Setcap is not installed, falling back to setuid
Processing triggers for libc-bin (2.23-0ubuntu11.2) ...
root@92599fab1ba3:/# ping google.com
PING google.com (142.250.66.46) 56(84) bytes of data.
64 bytes from 142.250.66.46: icmp_seq=1 ttl=37 time=80.9 ms
64 bytes from 142.250.66.46: icmp_seq=2 ttl=37 time=36.7 ms
64 bytes from 142.250.66.46: icmp_seq=3 ttl=37 time=138 ms
^C
--- google.com ping statistics ---
4 packets transmitted, 3 received, 25% packet loss, time 3004ms
rtt min/avg/max/mdev = 36.780/85.478/138.706/41.734 ms
root@92599fab1ba3:/# ps -a
  PID TTY          TIME CMD
  311 pts/0    00:00:00 ps
root@92599fab1ba3:/# docker ps -a
bash: docker: command not found
root@92599fab1ba3:/# exit
exit
```

Commiting changes

```
C:\Users\Abby0803>docker ps -a
CONTAINER ID    IMAGE          COMMAND               CREATED         STATUS                    PORT
S     NAMES
92599fab1ba3    ubuntu:16.04   "/bin/bash"           3 minutes ago   Exited (127) 5 seconds ago
      strange_faraday
23368a6b4d2a    ubuntu:16.04   "/bin/bash"           17 hours ago    Exited (0) 16 hours ago
      determined_perlman
ea5c8feda42f    ubuntu:16.04   "/bin/bash"           21 hours ago    Exited (0) 21 hours ago
      charming_ganguly
84b7c3dc7a4e    ubuntu:16.04   "/bin/bash"           22 hours ago    Exited (0) 22 hours ago
      beautiful_beaver
d7bba29e672e    ubuntu:16.04   "/bin/bash"           22 hours ago    Exited (0) 22 hours ago
      blissful_carver
977b0dad8078    ubuntu:16.04   "/bin/echo 'Hello wo…"  22 hours ago    Exited (0) 22 hours ago
      boring_kirch

C:\Users\Abby0803>docker commit -- help
Error response from daemon: No such container: help

C:\Users\Abby0803>docker commit --help

Usage:  docker commit [OPTIONS] CONTAINER [REPOSITORY[:TAG]]

Create a new image from a container's changes

Options:
  -a, --author string    Author (e.g., "John Hannibal Smith
                         <hannibal@a-team.com>")
  -c, --change list      Apply Dockerfile instruction to the created image
  -m, --message string   Commit message
  -p, --pause            Pause container during commit (default true)

C:\Users\Abby0803>docker commit -a 'David Elner' -m 'Added ping utility.' 786 delner/ping
"docker commit" requires at least 1 and at most 2 arguments.
See 'docker commit --help'.

Usage:  docker commit [OPTIONS] CONTAINER [REPOSITORY[:TAG]]

Create a new image from a container's changes

C:\Users\Abby0803>docker commit -a "David Elner" -m "Added ping utility." 786 delner/ping
Error response from daemon: No such container: 786

C:\Users\Abby0803>docker commit -a "David Elner" -m "Added ping utility." 925 delner/ping
sha256:8286fe0a49b6c77a3c5a2f6a0e593c8e6756b306123e2843e341c79bea1ee616
```

```
C:\Users\Abby0803>docker images
REPOSITORY      TAG        IMAGE ID        CREATED          SIZE
delner/ping     latest     8286fe0a49b6    12 seconds ago   170MB
ubuntu          16.04      9ff95a467e45    3 weeks ago      135MB

C:\Users\Abby0803>docker run -it --rm delner/ping /bin/bash
root@4953ee5f7d80:/# ping google.com
PING google.com (142.250.66.46) 56(84) bytes of data.
64 bytes from 142.250.66.46: icmp_seq=1 ttl=37 time=134 ms
64 bytes from 142.250.66.46: icmp_seq=2 ttl=37 time=176 ms
64 bytes from 142.250.66.46: icmp_seq=3 ttl=37 time=443 ms
^C
--- google.com ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2003ms
rtt min/avg/max/mdev = 134.139/251.568/443.969/137.148 ms
root@4953ee5f7d80:/#
```